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4 Goodyears

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An Evaluation of the Goodyear's Auto Service Line

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Introduction

The objective of this research project is to develop a new product or service line for Goodyear that does not involve the production or sale of tires. Goodyear is interested in developing unique business ideas they can capitalize on in innovative ways. To accomplish this, it is important to understand Goodyear's core competencies and how its knowledge and talent can be applied to new business activities. For this reason, we must first understand the company's history, values, and goals.

Company History

Goodyear found its humble beginnings in 1839 when Charles Goodyear accidentally discovered that the addition of heat and sulfur alters the consistency of rubber, which would later be called the vulcanization process. However, it was not until almost 60 years later that Frank Seiberling founded The Goodyear Tire and Rubber Company in Akron, Ohio. By 1916, this company would become the largest recognized tire company in the world (Our Company History: Goodyear, 2019). Since then, Goodyear has prioritized their efforts in delivering innovative services to a wide range of consumers. Through the use of exceptional branding and customer relations, The Goodyear Tire and Rubber Company has become arguably the most recognized and respected tire company worldwide.

Company Products and Services

While Goodyear is dominantly known for their tire product lines, the company is also present within the automotive service industry. According to the company's 2019 annual report,

tire-related sales represented 87.8% or $6.9 billion of Goodyear's net sales in its American segment. In the same year, service-related sales represented 6.8% or $535 million of Goodyear's net sales in is American segment (The Goodyear Tire, 2020). Within this service sector, Goodyear provides a wide variety of basic auto services such as oil changes, batteries, brakes, flat tire repair, and wheel alignment. The company also offers a large selection of more in-depth vehicle maintenance services such as 29-point inspections, headlight replacement, ventilation cleaning, and fluid replacements. Whether a vehicle is having trouble with electrical problems, mufflers and exhausts, or shocks and struts, Goodyear employs technicians that possess the knowledge and expertise to quickly address and solve these problems (Goodyear: List of Auto and Tire Services, 2019).

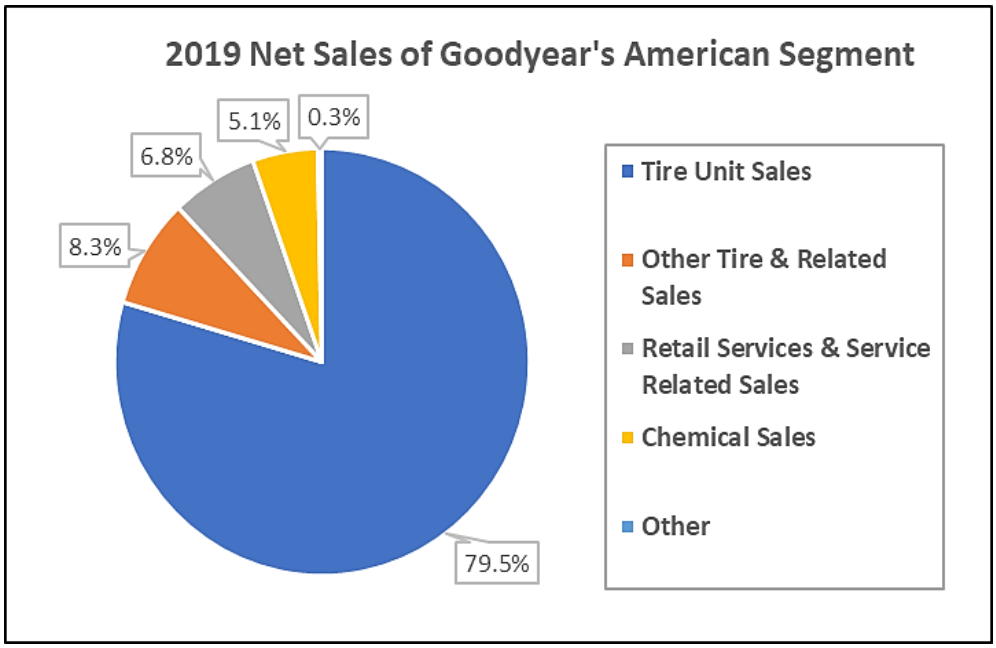

Fig. 1 2019 Net Sales of Goodyear's American Segment

Given the current list of products and services that Goodyear markets, it is evident that the company's core competency depends on its expertise around automobile maintenance and repairs. The company utilizes this knowledge to provide consumers with revolutionary products

and services every day. With this in mind, is there currently an opportunity to improve Goodyear's current auto repair and maintenance services? While Goodyear more so dominates global tire production, one could argue its repair and maintenance services compete more aggressively with popular brands like Midas, Jiffy Lube, and Valvoline. In 2019, for example, Valvoline service centers earned $994 million in net sales in the American segment while Goodyear service centers earned $535 million (Valvoline, 2020; The Goodyear Tire, 2020).

It is obvious that Goodyear has the knowledge and talent to provide high quality auto service, but the current challenge lies in further developing Goodyear's brand beyond its tire production. What qualities do consumers value most from their auto service provider? Are there exclusive services or strategies that a company like Goodyear could utilize to better exemplify these qualities? What if Goodyear could provide consumers with a unique auto service experience that delivers on these qualities better than any other auto service company? These are the questions that our research aims to answer.

While there are around 230,123 automobile service establishments throughout the United States, the question of consumer satisfaction with their performance remains unclear (Number of Establishments, 2020) Typically, consumers can easily judge the majority of products and services they buy because the necessity and worth are immediately apparent to them. However, the auto service industry is unique in that most consumers do not always understand the products and services within the auto service ecosystem. For this reason, trust is instinctively one of the most important qualities that an automotive service company can deliver. Due to the knowledge gap between buyers and sellers, it is easy for customers to be taken advantage of in an auto service situation. This reality understandably supports varying levels of mistrust and purchase anxiety from consumers.

With these varying levels of consumer mistrust and anxiety, what possible opportunities could Goodyear invest in to ease this consumer mentality? Could Goodyear develop a strategy or purchasing channel for their automobile centers, founded on honesty and transparency? This strategy would be designed to capitalize on the qualities that consumers desire most from their auto service providers. The questions our team will attempt to answer throughout our research are as follows: **1)** Is there a significant need and desire for an auto maintenance line that emphasizes maximum trust and transparency? **2)** What market segment values these qualities and is best suited to be targeted by this service? **3)** How should the service be constructed, developed, and implemented for maximum efficiency and appeal?

To conclusively answer these questions, we will examine factors such as population trends, automobile market and service trends, consumer knowledge, and trust in the auto service industry.

Introduction to the Target Market

Instead of focusing on population trends across the United States, we will narrow the focus to the state of Ohio. One reason beyond our exclusive focus on Ohio is due to Goodyear's rich history and familiarity within the state. In addition, we believe that the diverse population, urbanization, and wealth trends will allow a well-tested implementation of our proposed solution. If the strategy is successful within Ohio, expanding into other areas of the United States may be possible; this will depend on where success of the strategy occurs within Ohio.

Population, Urbanization and Wealth Trends

Since its founding in 1803, Ohio has experienced both rapid and steady growth over its lifetime. In fact, the state's population reached two million in 1850, six million in 1920, and eventually 10.5 million by 1980 (Schmitt, 2001). Following 1980, however, Ohio's annual population growth slowed considerably to 0.67% as the impact of urbanization became clear; the current state currently boasts 11.7 million people (Ohio Population, 2020). During the Industrial Revolution, Cleveland was the main connection between the east coast and the rest of the country (Schmitt, 2001). Cleveland was a vibrant manufacturing hub that connected Chicago to the Atlantic states. Thus, there has been a rapid movement toward cities like Cleveland over the course of Ohio's history, leaving rural and suburban communities without the original quality of resources (Schmitt, 2001).

Similar points can be made about Cincinnati as it too was a vibrant manufacturing hub, connecting travelers to the Mississippi River as they came across the Ohio River. Like Cleveland, the city of Cincinnati experienced rapid growth during the Industrial Revolution yet, leaving many areas of southern Ohio with scarce resources and limited opportunities. In other words, if someone wanted the opportunity to make a strong living, moving to a big city, like Cleveland or Cincinnati was a necessity. Interestingly, over Ohio's history, the middle of the state began to condense around the city of Columbus. This city is currently recognized as the

new “shining star” of Ohio as it still experiences rapid growth, which can be seen in the population density figure below (Schmitt, 2001).

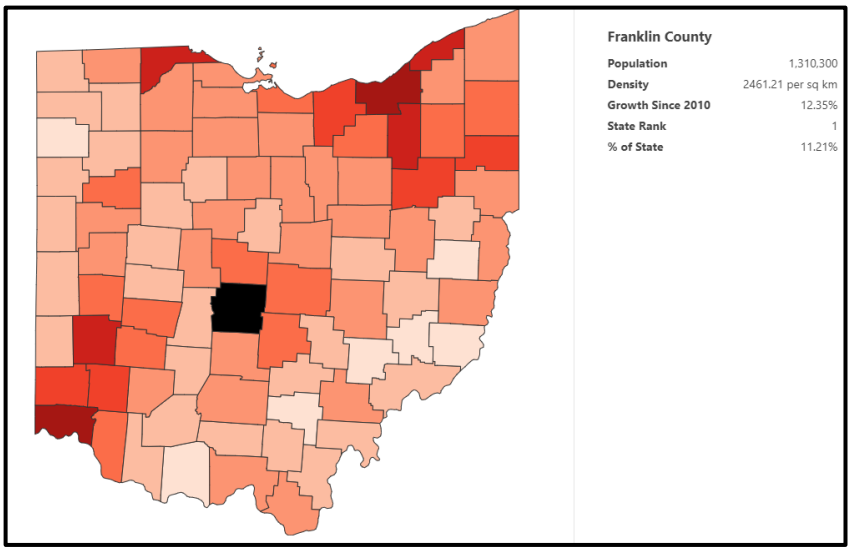

Fig. 2 Franklin County

In further analyzing these mentioned major cities today, some noticeable trends are evident. For example, Cuyahoga County, which includes Cleveland, represents more than 10% of Ohio’s total population yet has seen a cumulative -2.68% growth rate since 2010 (Schmitt, 2001). This downtrend is due to the county reaching its full population capacity. Cincinnati, on the other hand, has seen a slight cumulative growth rate of 1.80% since 2010; its growth has noticeably decelerated over the past decade and is likely to continue. Finally, Franklin County, which includes Columbus, is experiencing a cumulative growth rate of 12.35% according to the 2010 census (Schmitt, 2001).

Columbus has experienced this unique population trend due to multiple factors. First, as the middle class has grown over time, many people residing in the counties surrounding Franklin county have condensed; therefore, urbanization has gained traction. “Most of the fastest growing cities in America are in the Sun Belt or the Pacific Northwest, but one city in “fly-over” country

is keeping pace—Columbus, Ohio. Realtor.com recently ranked Columbus as America's fourth-hottest housing market based on the number of hits each listing receives and time on the market. Columbus is also the 14th largest city in the country, and the only large northern city to grow by more than 10% from 2010 to 2017." Also, while resources tend to be more available in the cities, many of the counties surrounding Franklin do not have the same resource availability that is within Columbus. This trend is notable within the counties surrounding Franklin County, as they have experienced negative or stagnant growth (Millsap, 2018).

Next, when evaluating age demographic trends within Ohio, we found a noticeable trend, illustrated in the population pyramid below. The data suggests that Ohio's youth population (15-25-year olds) is growing at a very rapid rate (about 450,000) while the growth rate of older age groups progressively decreases to below 150,000 for those older than 70. With such an impressively growing market, Goodyear may find this to be an opportunity to introduce its new products or service lines early enough to create loyal long-term consumers. As these young consumers are just entering this market, they are more susceptible to trying different available products and services. Specifically, this data supports the idea that Goodyear could potentially target the growing youth population between the ages from 18 to 30 years. This age range has led Ohio's population growth since 2010 (World Population View, 2019).

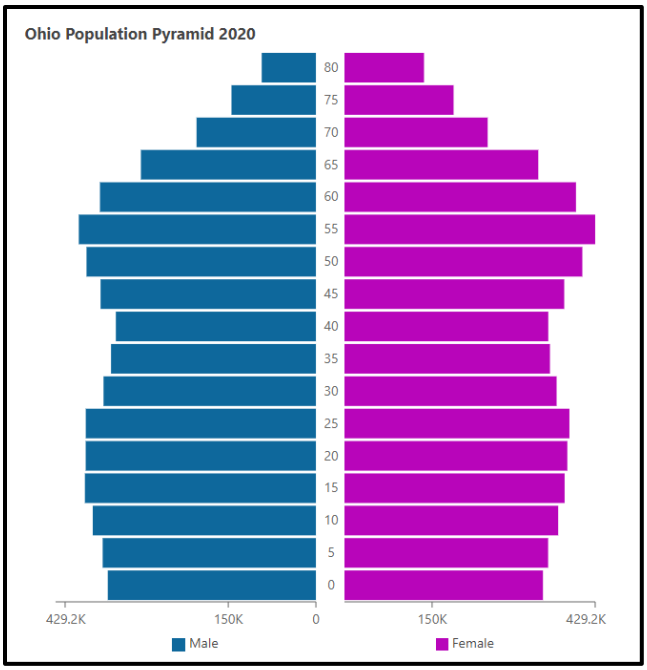

Fig. 3 Ohio Age Distribution

Finally, the wealth trends within Ohio point to the potential opportunity for business growth for Goodyear. As shown in the figure below, Ohio's wealth is spread out with the median of households sitting within the $50,000 to $100,000 range. This is essential because we need to understand the demographic we are dealing with. Also, it is important to note that there are quite a few married families, making less than $25,000 annually. Naturally, these families would try to cut costs at the margins, therefore opening up a potential market for Goodyear to capitalize on in terms of capturing their trust through high quality of service at an affordable price (World Population View, 2019).

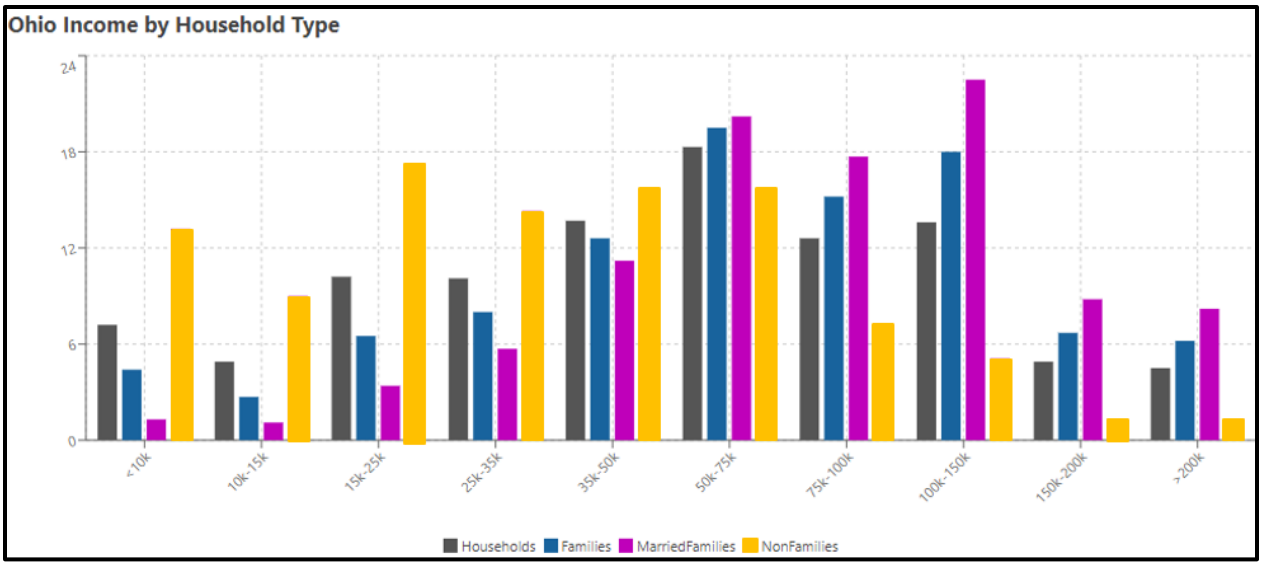

Fig. 4 Ohio Wealth Distribution

Based on these varying trends, Ohio seems to be an ideal state to implement a new strategy that focuses on improving consumer trust. This is due to the fact that some of the population has condensed into three main economic hubs while the rest of the population is stuck with limited growth and resources. In addition, Ohio holds potential to run various pilot programs because of its known diversity. For example, Ohio's large cities like Cincinnati and Cleveland are experiencing minimal growth while Columbus grows at a rapid pace. Ohio also has vast amounts of farmland in the south and suburbia in northeast Ohio, which could potentially prove to be an untapped market.

Owning Vs. Leasing Trends

As we look for the best segment market to target, understanding trends surrounding owning and leasing vehicles is crucial. According to Tara Bernard, of the New York Times, leasing is a popular trend that is out there, but it is much more costly than actually owning a vehicle (Siegel , 2013). She mentions that owning vehicles is a huge deal for the Baby Boomer

generation, but now, younger generations view vehicles as commodities that can be traded back in after part-time use. To clarify, used vehicles can be bought to serve as a low-cost alternative to leasing, but most of those who lease are going for a new or very lightly used vehicle. The distinction between leasing vehicles and using used vehicles as a lower cost alternative is an important distinction to understand. As appealing leasing is to many, it can often create a difficult cycle for consumers to escape; if not enough financial capital is saved while leasing a vehicle, one may find himself continuously leasing instead of saving for a down payment to eventually own a vehicle. Therefore, the consumer is more likely to lose the opportunity to actually own a non-leased vehicle that could even later be traded in for a newer car model in the future instead of relying on a leasing cycle. Those who lease become accustomed to the low monthly payments, making it even more difficult to switch to the usually higher monthly bills of financing a new vehicle or even buying the vehicle outright (Siegel , 2013).

That is one of the major downfalls of leasing that Bernard points out in the article. She believes that this downfall could eventually discourage many consumers away from leasing. Also, she speaks with Alec Gutierrez, a senior market analyst for Kelley Blue Book, who notes that buying and maintaining a new car has proven to be more economical today and that it can "probably go another five years with minimal costs" (Siegel, 2013). In addition, leasing does not give consumers the opportunity to trade in the vehicle for any return of partial value; therefore, the consumer must return their leased vehicle while holding excess capital on hand for a new lease, which can prove difficult for many American consumers (Bernard, 2013).

In addition to touching on the topic of leasing, the article also discusses the growth of the used car market. Jeff Barlettt, deputy automotive editor at Consumer Reports, shares strong encouragement to readers to always buy used vehicles as it often proves much more economical

than buying new or leasing vehicles. He specifically states, “Obviously, nobody does this, but when you pay cash, you don't have to worry about them sneaking in all of these fees. You just negotiate a price, and then write a check for that number. If I can put some of it on my credit card and then get the points and pay it off at the end of the month, I come out ahead” (Bernard, 2013). This price negotiation often proves more successful for used cars and while paying Bartlett heavily emphasizes to pay in cash if possible. While it may seem old fashioned to modern consumers, it works well in their favor in the long run (Bernard, 2013).

This article hints at the possibility of a large existing untapped market for Goodyear to target in providing a unique service. This market segment includes those who own their vehicles and want to trust an organization to work honestly on their cars. If the cost of leasing continues to be a financial burden on consumers, it could play in Goodyear’s favor as an economic recession is also predicted to appear in the near future. If this is the case, consumers will naturally spend more conservatively, further expanding the potential growth of used vehicle ownership and maintenance to save money. We believe that because of this economic situation, consumers in “hard to reach” areas in the state of Ohio, may become more willing to provide maintenance on their own vehicles. If Goodyear can provide a cost-effective service for these consumers, then that could be of great benefit. Our team believes that these factors may catapult the success of an introduced product or service that targets this mentioned segment, benefiting both Goodyear and its customers.

In addition to these takeaways about owning and maintaining gasoline cars, our team believes an analysis of electric vehicles is necessary as they are incrementally gaining popularity. Specifically, Jakob Punchinger, senior scientist at IRT SystemX, discusses a developing trend within the auto market, highlighting the potential growth of electric vehicles (EV) and

autonomous vehicles (AV). He explains that consumer access to electric vehicles will be offered via direct ownership of the vehicle or using the vehicle as a means of public transportation (Puchinger, 2019). He highlights this point in detail:

> The first ownership model is based on AVs operating within an on-demand (taxi) service while the second proposes private vehicle ownership combined with offering the AV to other users when not used by its owner and thereby partially financing the vehicle's acquisition cost. In addition to the ownership model comes the possibility of sharing rides. The main difference when sharing a trip is that an individually-owned vehicle always prioritizes its owner. (Puchinger, 2019)

In his report, Puchinger expresses that owning these vehicles will prove more beneficial than sharing them because the vehicle's owner will always be prioritized. Sharing a vehicle puts a consumer at risk of not being the primary consumer when multiple owners request a ride. Puchinger notes that "with the increasing urbanization rates, a swift growth in people's demand for transportation is taking place nowadays. This increasing demand is associated with a set of challenges, such as limited oil supplies and growing levels of pollution and traffic congestion" (Puchinger, 2019).

These findings further hint at the possibility of a large existing untapped market for Goodyear to target in providing a unique service. While there is a swift demand for transportation in urban areas, what about those in rural or suburban areas?

There appears to be a potential untapped market due to the lack of resources in this area. A survey, conducted across Texas, asked respondents for their opinions about electric vehicle technology, demonstrating that Texans' top two concerns regarding EVs are affordability and

equipment failure. Furthermore, service attributes including travel cost, travel time, and waiting time may be critical factors when deciding to share an EV or not (Puchinger, 2019).

“In Ohio, An average driver in the most fuel-efficient gasoline-only car (12k miles/year, $2.31 per gallon, 50mmg, non-plug in) would pay $79.20 over 365 days between Oct 2019 and Oct 2020, rising to $92.88 over 365 days between Oct 2020 to Oct 2021 using just the gas tax, but the same person under the EV/hybrid fee would pay $100 a year.” This is not to mention the electric-only driver, who is now hit with a penalty of $200 a year, which is an incentive against getting an EV (Nabong, 2019).

“This proposal really hurts middle- and lower-class drivers who consider an EV, as such fees also make it less affordable to buy a new EV than a gasoline vehicle of the same sticker price, which is sort of like my old managers making it harder to access the new printer/newer technology and incentivizing the older, terrible printer, rather than just letting people pick the better printer if they want to.” A better option for Ohio would be to make investments to grant access to more efficient technology, but at the very least they shouldn't make it harder for more folks to access it (Nabong, 2019).

Overall, population trends as well as trends around owning vs leasing personal vehicles show evidence of a potential untapped market for Goodyear to develop a product or service around the idea of building consumer trust in the brand. This market consists of those who currently self-maintain their vehicles to save money (or just don’t trust the auto service shops), or those who are thinking about self-maintaining their vehicle.

As of now, leasing is trending among consumers, but car ownership also continues to hold a large amount of gaining interest. Further, our team believes that despite the development

of EV's and AV's in the current market, car ownership will still become absolutely necessary for rural and suburban drivers; this is due to shared rides not being possible with the more distant set locations. With these points established, one may still wonder if automobile market trends in general also support the idea of this proposed growing niche market. This area is studied in the following section.

Automobile Market Trends

To further develop our objective, one area of study lies within the current vehicle market trends within the US. Specifically, by better understanding trends around how the vehicle market is evolving for American consumers, we can evaluate our findings in relation to Goodyear's potential for business growth via a unique business offering. The first question one may ask about the consumer end of this industry may involve the number of licensed US drivers as this could be one useful metric. According to the US Department of Transportation, the number of licensed US drivers has increased by 34.7% since 1990; specifically, the number has increased from 167 to 225 million licensed drivers over this time range (US Department, 2018). Furthermore, this trend is projected to continue to grow by 2.2% or to 230 total million licensed drivers by the year 2020 (Number of Licensed, 2019). The figure representing this overall trend can be found below.

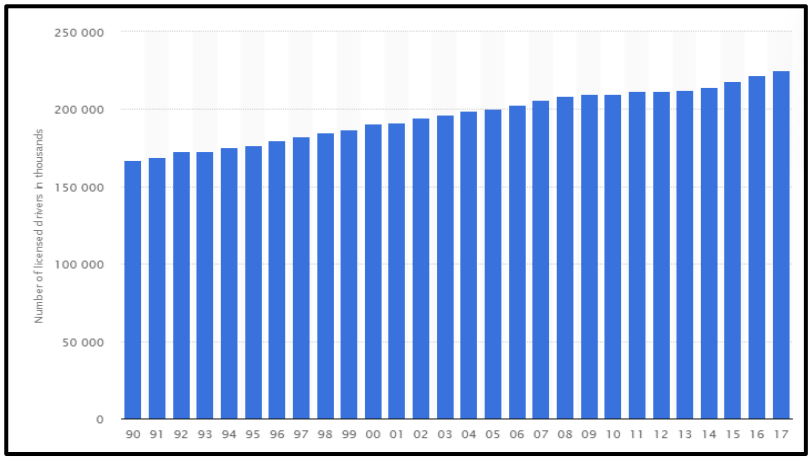

Fig. 5 Number of Licensed Drivers

As these statistics could stand as a healthy indicator for investors within the industry, it only paints a partial picture. In fact, many US citizens acquire and retain drivers' licenses to simplify the means of proving some facet of their identification, required in certain situations like buying alcohol and tobacco. While one could technically use their birth certificate, acquiring and using a driver's license is often simpler even if one does not drive a vehicle. Therefore, solely relying on the growing trend of the number of driver's licenses is only a start to understanding the automotive market.

One following question may investigate whether or not licensed drivers are driving more each year. According to the US Department of Transportation, the national annual average number of miles driven is 13,476; this is a 37.9% increase from 2014's national annual average of 9,772 miles (Jones, 2019). In addition to both of these uptrends of licensed drivers and average annual miles in the US, a growing number of sold and registered motor vehicles is also evident. A study by the Bureau of Economic Analysis shows a total of 17.2 million light vehicles sold 2018; this is a 19.3% increase from 2012's figure of 14.4 million light vehicles. In terms of vehicle registration, about 272 million vehicles were registered in 2017, which is 7.5% increase from 2012's figure of 253 million registered vehicles (US Department, 2019).

Unfortunately, every luxury in life comes at a cost, including that of buying, leasing, and maintaining a personal vehicle for this growing population of drivers. Specifically, the first and foremost burden of owning a car is the actual purchasing the car in it of itself. A study by the National Automobile Dealers Association found that the 2018 average selling price of a new vehicle was around $35,250; our team would classify this as a significant purchase as it represents 55.7% of the median household income in the US (National Automobile, 2018; US Census, 2019). Therefore, it makes sense that more consumers have historically turned to the

more cost-sensitive option of purchasing used vehicles; on average in 2018, they were 42.1% cheaper than new vehicles (National Automobile, 2018). From 2013 to 2018, annual sales of used light vehicles increased by 12.9% to a total of 40.4 million vehicles in the latter year. Within the same time range, annual sales of new light vehicle sales increased 10.1% to a total of 17.2 million vehicles in the latter year. In addition to the annual sales of used light vehicles growing faster than new light vehicles, the former also represents 70.1% of this market (Automotive News, 2019).

This trend toward saving money by purchasing used vehicles makes sense also for the fact of other associated increasing costs. For example, the cost of regular gasoline has more than doubled from $1.30 to around $2.72 over the past eighteen years; this 109% increase in price per gallon further financially burdens drivers. This is especially the case when considering that average mileage per driver is growing as highlighted earlier (EIA, 2019). Also, the cost of licenses, registration fees, and associated taxes increased by 1.9% while deprecation accounts for more than 36% of the average annual cost for a vehicle. (Edmons, 2019). For these reasons, consumers are more inclined to not only buy used vehicles but to maintain them as best as they can for long-term use.

According to IHS Markit, the average age of light vehicles within the US has risen to 11.8 years; this upward trend has been evident over the last seventeen years (Culver, 2019). This fact is in light of a growing segment of drivers that want to maintain their used vehicles to squeeze out every possible mile. The longer one can drive their current car with minimum required maintenance means increased savings that can be used to continue the cycle of then buying a new used vehicle once maintenance costs are too unreasonable. While this market segment reaping the many financial benefits in maintaining their own personal used vehicles,

they also face the burdens of handling this maintenance and any associated costs. A deeper analysis of the related auto maintenance and repair industry is highlighted in the next section.

Auto Maintenance and Repair Industry

As automobile consumers increasingly drive their personal vehicles, the car maintenance and repair industry has naturally grown to support this trend. Specifically, a 2019 Mintel report forecasts increased consumer spending in this industry by an annual average rate of 3.8% from $188.4 billion in 2018 to $224.1 billion in 2023 (Lo, 2019). Reacting to this increased spending, the number of auto service establishments is predicted to grow by 4.8% to 287,206 by the year 2024. Visualizations of these forecasts are shown below (Lombardo, 2019). Recent reports further emphasize the following two particular trends, supporting this industry growth: Americans' heavy reliance on their vehicles and increasing repair costs due to newly integrated vehicle technology such as cameras and sensors (Lo, 2019; Lombardo, 2019).

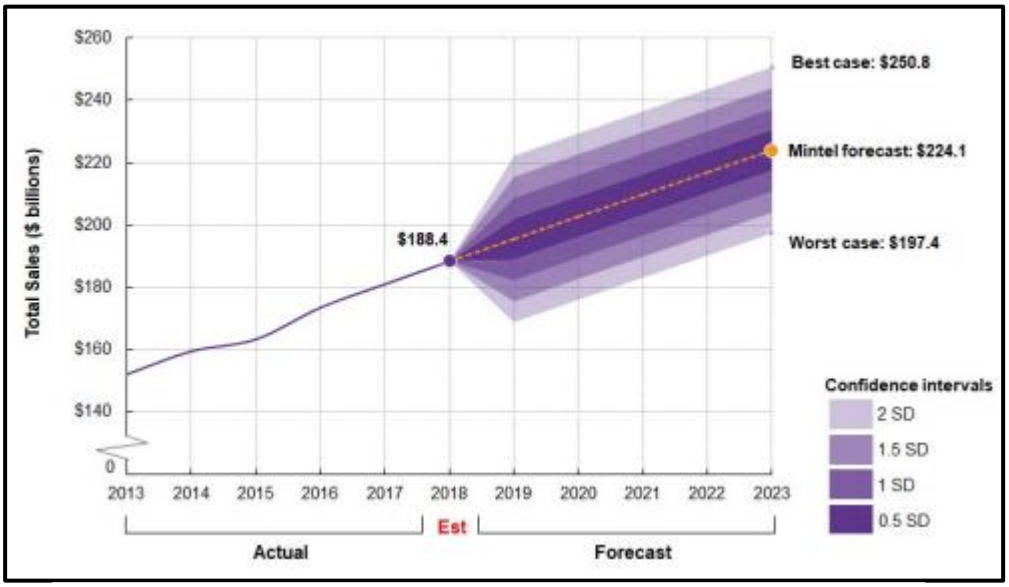

Fig. 6 Forecast of Consumer Spending in Automotive Service Industry

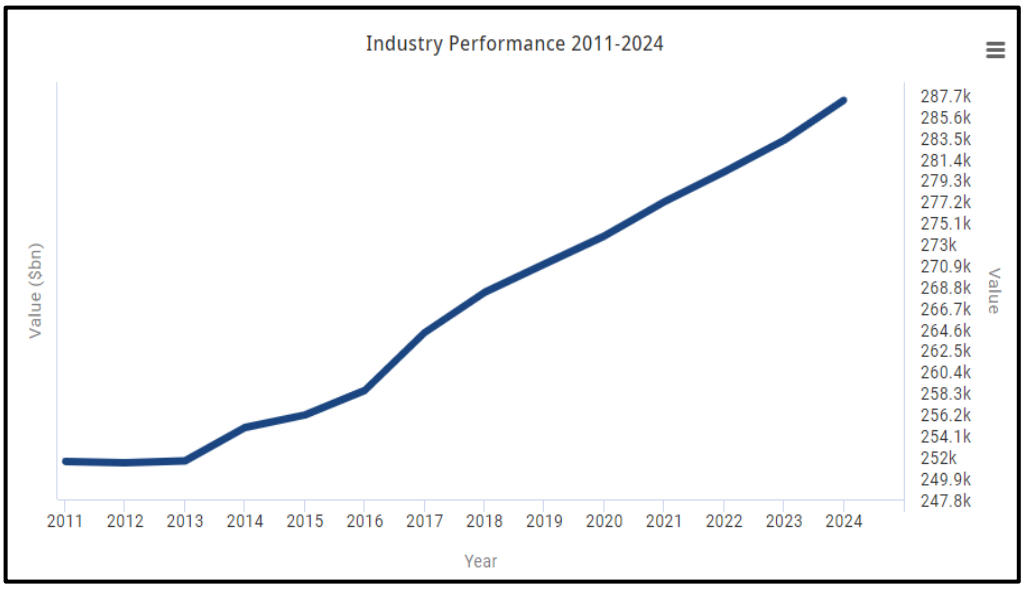

Fig. 7 Forecast of Auto Service Establishments in US

Despite the fact that this industry is growing, overall market share remains fragmented as consumers are offered a plethora of ways to service their vehicles. When drivers were asked what locations they had their car maintained in the past twelve months, the following top five unique most popular options were mention: any dealerships (46%), independent repair shops (28%), maintenance chains (22%) , any retail stores (16%), and auto body shops (11%) (Lo, 2019). An extended breakdown of consumers' top options is shown in the figure below.

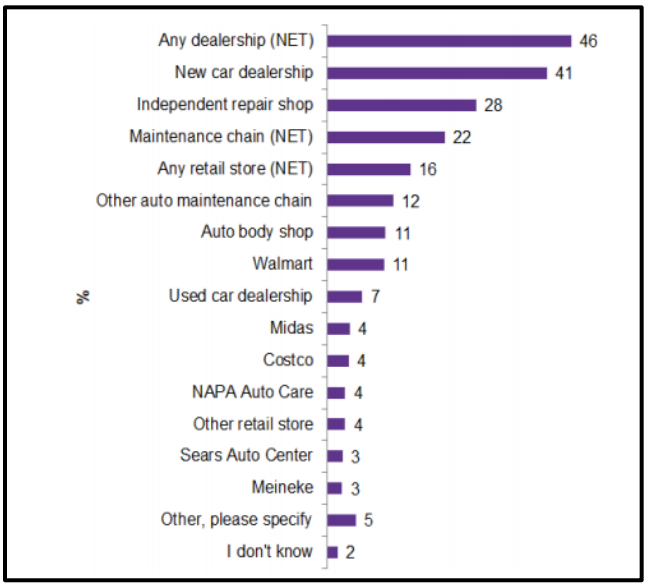

Fig. 8 Types of Automotive Service Locations

It is important to note that respondents to this study were given the option to pick multiple answers; this explains why the total of these percentages do not add up to 100%.

Oddly enough, the rankings of these categories do not necessarily coincide with overall reported customer satisfaction. According to a 2019 Consumer Reports survey, various dealerships actually struggled in capturing customer satisfaction across the board. While reportedly the most popular option, dealerships scored an average satisfaction rating of 79 out of 100; a rating of 100 represents the highest possible rating of consumer satisfaction. In comparison, less popular options, including independent shops and maintenance chains, scored ratings of 90 and 88 respectively (Auto Repair Shop, 2019). One reason that could explain why consumers go to dealerships despite the satisfaction gap is because of the existing warranty packages. Those who buy cars directly from dealerships often entangle themselves in warranty packages that encourage those consumers to get their cars fixed at the dealerships.

A second reason that could explain consumers' choice of dealerships is because they fix vehicles with original equipment manufacturer (OEM) car parts, whereas maintenance chains and independent shops more likely use aftermarket parts. There is growing evidence, however, of a decreasing perceived value of these differences among consumers. For example, one survey published in 2018 indicated that 63% of drivers have declined the option of warranty extension as there is a "a disconnect between appreciating the importance of an extended warranty and actually purchasing one" (Dayton, 2018). This may prove to be an opportunity for maintenance chains like Goodyear to service those unsatisfied consumers, declining warranty extensions and substituting expensive OEM parts with budget friendly aftermarket car parts.

Even within these popular options, no significant market players exist in this industry, increasing the overall opportunity for specific companies like Goodyear to grow. In fact, no

players within this market represents more than 5.0% of industry revenue (Lombardo, 2019). Within these individual segments, there is evidence of preference from specific types of consumers and cars. For example, services from new car dealerships are more popular among those, representing Swing Generation and Baby Boomers (Lo, 2019). In addition, those with new cars use new car dealerships over used car dealerships and independent repair shops. On the other hand, services from maintenance chains and retail stores are more popular among those, representing Generation X, Millennials, and iGeneration. In addition, service for used and previously owned vehicles depend on independent repair shops (Lo, 2019). Extended breakdowns of the preferred service locations by generation and car type are shown in the figures below:

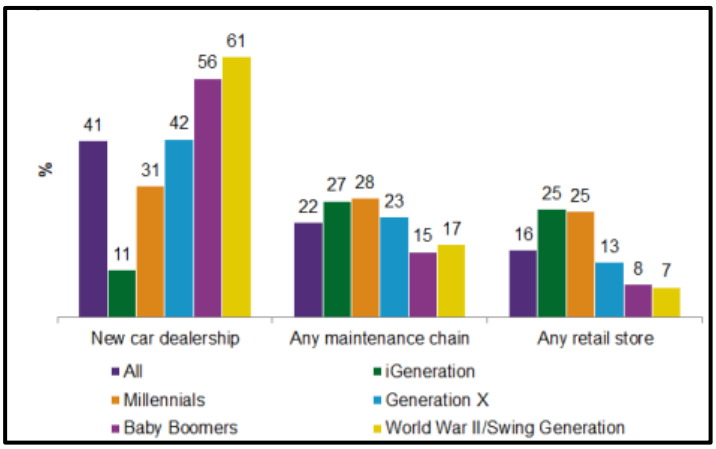

Fig. 9 Automotive Service among Generations

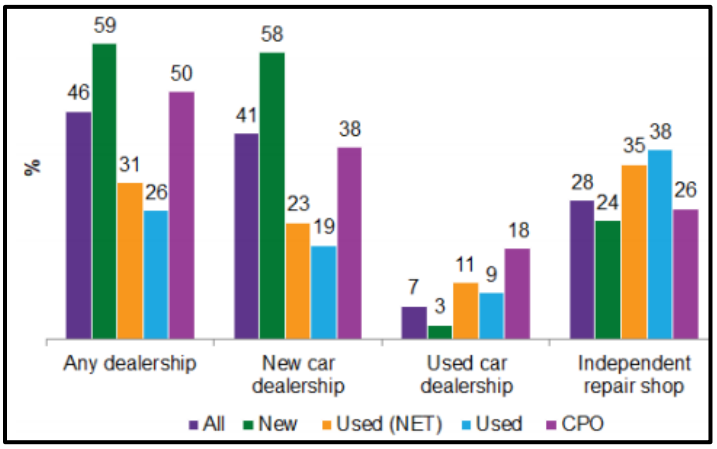

Fig. 10 Automotive Locations among Generations

One possible reason behind why this market continues to be fragmented is due to varied total value offerings. For example, offerings such as location, trustworthiness, quality, and cost all play significant roles in influencing where a consumer may go, and each fragment of the market may significantly advertise themselves on only a few of these offerings. Therefore, each consumer personally evaluates the value of the various offerings, deciding on the desired

segment and company. An extended breakdown of the top value offerings among consumers is shown in the figure below:

Fig. 11 Automotive Service Qualities

In terms of direct opportunities for business growth, location and trustworthiness represent two popular offerings from this industry, followed by quality and cost. However, ease of scheduling, reputation, and speed of service still represent significant factors when choosing among the range of available servicing locations. This is expected, as vehicles play a significant role in the average American's life socially and financially. As was highlighted earlier, the average 2018 cost of a new vehicle represents 55.7% of the median household income in the US (National Automobile, 2018; US Census, 2019). Furthermore, 86% of Americans still drive personal vehicles to commute between home and work despite other available options, such as public transportation (10%) and ride sharing (4%) (Richter, 2019). Necessary vehicle repairs and maintenance, therefore, are often addressed from the perspectives of these four top service attributes.

With the current complexity of vehicles, maintenance and repairs can often vary on a per case basis. However, in terms of the majority vehicular work needed, consumers often rely on the following two categories of service: oil changes and non-oil changes. In 2018, 79% of consumers requested oil changes, done by professionals; non-oil changes were requested by varying percentages, depending on the service. Some of these services include regular scheduled maintenance (48%), tire rotation (44%), tire installation (29%), and brake service (24%) (Lo, 2019). When the two most popular services, oil changes and regular scheduled maintenance, are broken down by household income, a progressive trend for requesting these services increases with more disposable income. Again, due to the wide range of provided services, this further supports a competitive, fragmented market as certain segments and companies specialize in specific tasks (Lo, 2019). An extended breakdown of the top provided vehicle services is shown in the figure below along with a figure visualizing popularity of oil changes and regular scheduled maintenance by household income.

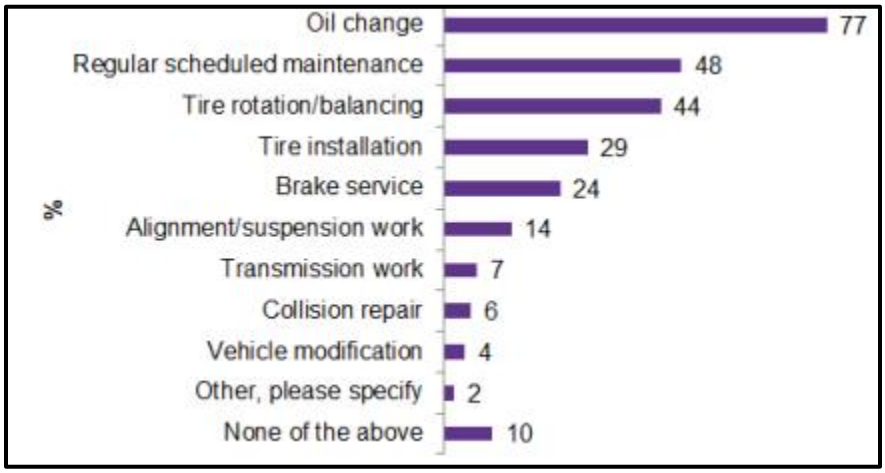

Fig. 12 Automotive Services

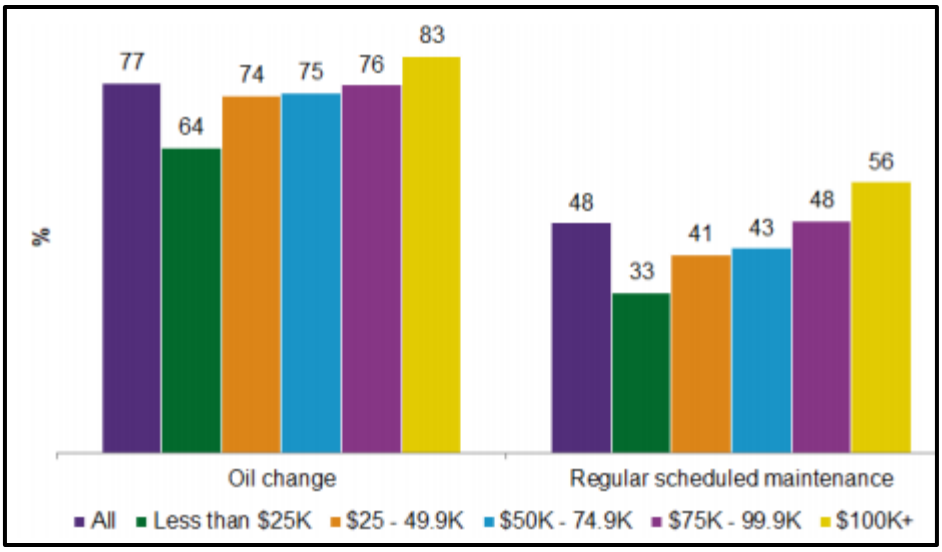

Fig. 13 Automotive Services among Income

Automobile Service Market Trends

As highlighted earlier, vehicles are very complex machines that require extensive knowledge to properly maintain them. Despite this fact, many drivers lack even the basic knowledge, required to keep their vehicles in healthy shape. This can become a liability to car owners by costing them not only the money to get their vehicle fixed but also the time their vehicles spend getting fixed in a shop. This is more so especially true for younger generations, including Millennials and Generation Z, than it is in older generations, including Baby Boomers and Gen X (King, 2016). This is due to the fact that the former knows less about general car maintenance than the latter.

In an all-age demographic survey of over 2,000 individuals, the results showed that almost 41% of people overall were either completely clueless or not very confident in their ability to change a flat tire (King, 2016). This is one of the most prevalent issues that occur for vehicles, often leaving many drivers dependent on help from someone else. Furthermore, the

results demonstrated that over 59% of people were either clueless or not very confident in their ability to change their cars' oil. According to professional mechanics, changing a car's oil is heavily recommended after a few thousand driven miles. While needing to change a car's oil may not seem as urgent as fixing a flat tire, ignoring an oil change can, in fact, hurt vehicle performance if it is not addressed in a timely manner (King, 2016).

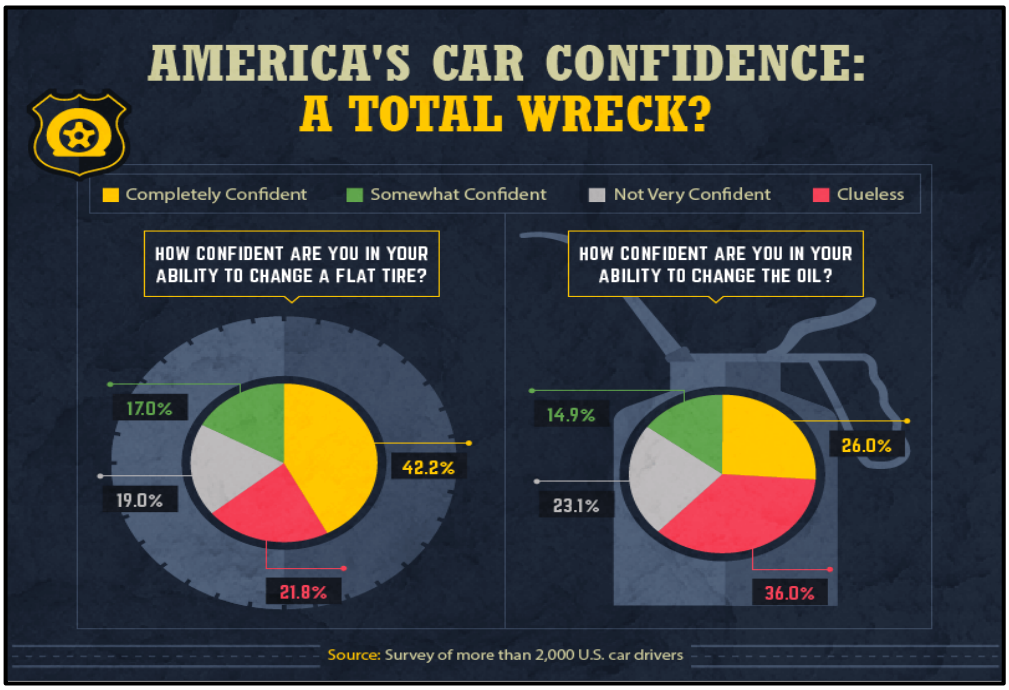

Fig. 14 America's Car Confidence

Labor Cost Trends

Depending on the issue, the majority of the cost associated with the repair is represented by the labor costs of technicians. As operational hours increase, the associated costs only continue to reach a point of frustration for consumers. According to a 2018 study, the price of vehicle maintenance has increased by about 3-5% on an annual basis. While this study was conducted for vehicles part of a fleet, it still applies to personal vehicles as the majority of this increase was due to the rising price of labor (Anitch, 2019).

Another study, conducted by the United State Bureau of Labor Statistics, revealed some staggering trends around automotive services. A $500 charge in the year 2000 for car maintenance is now equivalent to $833 in the year 2019. The average inflation rate during that period of time was 2.10% while the average annual increase for car maintenance and repairs was 2.72% (Bureau of Labor Statistics, 2019). If this trend continues, many people may be more sensitive to whether or not they are getting a good deal on their maintenance; this will fuel their desire to go to a shop that they can trust.

Automobile Service and Current Consumer Relationship

Furthermore, consumers often feel taken advantage of within the automotive maintenance market. According to a Mintel Report, "nearly four in five car owners purchased non-oil change automotive service last year." (Lo, 2019). While car maintenance may be necessary at times, research shows that many mechanics rip off consumers by including unnecessary repairs and exaggerating costs. In fact, in 2009, Attorney General Edmund G. Brown Jr. sued the popular American automotive service chain Midas for bait-and-switching their consumers. His investigation found that for over four years, 22 California Midas auto shops "regularly advertised $79 to $99 brake specials to draw customers in and then charged another $110 to $130 for unnecessary brake rotor resurfacing services – and hundreds of dollars more for repairs that were not needed or never performed" (Brown Sues, 2016). This violation of consumer trust not only cost the Midas franchises $1.8 million but also barred Maurice Glad, the owner of these franchises, from owning or operating an auto repair shop within California (Brown Sues, 2016).

Approved Auto Repair (AAA), America's leading provider of automotive-related expertise, conducted a survey about finding a trusted auto mechanic. The findings demonstrated that two-thirds of American drivers did not trust auto repair shops (Edmonds, 2016). Additional

findings from the survey included reasons why U.S. drivers lack confidence in auto repair shops. AAA identified the following: 76% of U.S. drivers surveyed found that shops recommended unnecessary services; 73% found that they were overcharged for services; 63% said they had negative past experiences; 49% expressed concern that the work would not be done correctly. (Edmonds, 2016).

In some instances, mechanics use scare tactics by presenting a list of "urgent" repairs to uneducated consumers in order to unnecessarily increase the overall charge. A Consumer Reports article highlights how one consumer brought in his Volkswagen because of a safety recall for the car's ignition switch. Like with many other automotive maintenance shops, the service department performed a free vehicle inspection on the car. However, while there is nothing inherently wrong about the free inspection, Consumer Reports notes that "some dealerships are exploiting safety recalls as a 'marketing hook' to sell additional repair work or even a new vehicle" (Can You Trust, 2019). In this particular situation, the mechanic told the consumer that his brake pads needed replacing and that a coolant leak was located near the thermostat. Unlike the majority of consumers, this vehicle owner was comfortable doing his own car maintenance and in fact, had replaced his own brake pads one month earlier. When he left the repair shop, he checked the leak which was diagnosed by the mechanic, only finding a small amount of dried coolant residue. Instead of relying on the mechanic, he proceeded to fix this issue by replacing the car's hose clamp, which he purchased for $3 from a local Advance Auto location (Can You Trust, 2019).

Unfortunately, we find this story to be popular among many uneducated consumers, who leave automotive service locations with an exaggerated list of repairs for their vehicle. More so, most consumers pay the extra money because they simply do not know any better. In fact, Fox

News reported that “over half (54%) of Americans feel intimidated when dealing with a car mechanic” (Schmall, 2018). In addition, ABC News paired up with a seasoned mechanic, who remained anonymous in giving ABC an inside scoop as to what goes on behind the scenes at an automotive maintenance shop. This mechanic himself admitted he applied shady tactics in the past while servicing consumers. Specifically, he explained, “when your boss tells you, either you do it here or the doors right there, what are you going to do?” A couple of key tactics the anonymous mechanic revealed are as follows: billing the customer for more time than a repair job actually takes, turning the routine oil change into something much more expensive, and exploiting fears over the check engine light. These are all ways that mechanics often take advantage of their customers. (Pridgen, Wagschal, & Wash, 2014).This creates a certain environment within the automotive maintenance industry that has the opportunity to be mended.

Building Trust and Relationships

In establishing that trust is needed between automotive service providers and consumers, our team has been tasked with the opportunity to find a way in which service providers can bridge this gap. A Mintel report, written by analyst Buddy Lo, highlights this issue in detail: “Trust is a big concern within the automotive industry, whether in sales or service; however, Mintel research shows that one in five car owners feel they have been taken advantage of on price when they’ve purchased automotive service. Complete transparency and efforts to educate car owners can build trust critical to success in the market”(Lo, 2019). Creating a way for consumers to better understand and build a relationship with automotive service shops could help build trust and loyalty to successful brands.

Furthermore, automotive service locations have the opportunity to capitalize on younger consumers by creating a positive online reputation. Research shows that younger consumers

expect a positive online image; specifically, "[53%] of young people aged between 25 and 34 prefer to seek out details online rather than talk to store staff when they are in a shop" (McDonald, 2018). Younger consumers also have a lower household income, which usually means they are more price sensitive when determining where to take their vehicle in for maintenance. With that being said, younger shoppers will gravitate toward the cheapest price and best online reputation. In the AAA survey referenced earlier, they also found that, "older drivers are more likely to trust auto repair shops than younger drivers" (Edmonds. 2016). A summary of what they found in the survey is as follows:

Baby Boomers are twice as likely than younger generations to fully trust auto repair facilities in general, with one-in-five reporting they "totally trust" the industry. Baby Boomers (76%) are also more likely to have a chosen auto repair shop that they trust compared to Millennials (55%) and Gen-Xers (56%).

Therefore, we can see there is trust to be gained from the younger generations. According to Spectrio, "Younger millennials are more likely to opt for certain services over older millennials, and even non-millennials. Those services include tire rotation/balance, brake service, tire replacements, car wash and detailing, tire alignment, wiper blade installation, and heating and cooling services" (Webb, 2018). Millennials are spending money on these services and it is more important than ever for auto service shops to learn how to earn their business.

When drawing conclusions, we have clearly presented a trust issue among consumers and auto service shops. The question at hand now is, what are auto service shops doing currently to build trust and relationships with their consumers?

There is no industry standard on how auto repair shops build trust with consumers. Most service shops get their business based on reputation. The customer base is heavily influenced on

word of mouth referrals and customer reviews. In this sense, there is no research done on what has been effective in building trust among consumers and auto service shops.

Although there is no significant research there are plenty of suggestions for auto service shops to follow to help fight off the mistrust stereotype. The most common theme among trust building tactics is having a consistent online and social media presence. Having testimonials on the website, good Google reviews and Yelp reviews will go a long way in the mind of a consumer. Another tactic is having more customer and mechanic involvement. Getting your car done is a very big expense at times and people want to put a face to the person who they are trusting with their vehicle. For example, a local, family run service shop Knibbe Automotive Repair in Calgary, Canada approaches service differently than most shops and has strong loyalty and local business because of it. This company follows five rules of thumb to ensure they are remaining transparent and trustworthy to their customers. The five policies are as follows: First, they ensure they have three service advisers for every four or five technicians. This stands out among competition who usually have only about 1.4 advisers per four or five technicians. Second, all of their service advisers are also trained and licensed technicians. The advisers are going to be customer facing and explaining to them what the tech is going to be working on, so they must understand it like they were the tech themselves. Third, the service advisers also are required to complete communication training. They want to ensure great communication between the shop, the customer, and the adviser is going to play an integral role in that. Fourth, is creating candid transparency for the customer. The service adviser is going to walk the customer through exactly what the tech replaced on the car, showing them the pieces that were replaced and explaining why. The fifth and last policy is creating an inviting environment for customers. At Knibbe the lobby is always clean and welcoming (Khan, 2018).

As we can see there are ways to build trust between consumers and auto service shops. The question at hand at this point is what can Goodyear do to differentiate themselves from other auto service shops while enhancing the customer's experience and building loyalty and trust?

Secondary Research Takeaways

Goodyear began business in the mid 1800's and have been very successful throughout the life of their company. While Goodyear is known mostly for their production of many different types of tires, they also are contenders in the car maintenance field in addition to other new areas of business. With this being said, we were given an objective to create a new product line that does not involve the production or the sale of tires. Goodyear already playing a role in the auto maintenance field led us to the idea of expanding that product line so that it is a main contender in the maintenance field going forward.

In order to evaluate whether or not a product like this is viable we examined population trends in the United States and specifically within Ohio. The current trends revealed that Goodyear may have a solid test market in Ohio because of the diversity of the population. Trends have also pointed to the fact that the used car market is not only growing but more so than the new vehicle market. As consumers begin to prefer buying used vehicles, increased maintenance is required to keep it running longer. While ride sharing has been shown to be an uptrend, especially in urban areas, many people within rural areas will still prefer vehicle ownership; this is due to locations being more separate within the latter than the former.

Another area that we focused on to determine the viability of our product are trends for automobiles. A promising trend that we found was the increasing number of driver's licenses, registered vehicles, and annual driven miles. In addition, the price of the average new vehicle is also increasing showing that people will likely turn to buying cheaper used cars as an alternative.

More used cars lead to a higher quantity of cars with increased mileage, which instinctively leads to more maintenance required during the vehicle's lifetime.

Now that people are driving more and more, this has led to a greater demand in the maintenance and repair industry, a 3.8% annual increase to be exact (Lo, 2019). We believe that this trend will increase due to the increasing amount of technology that vehicles have and will continue to develop in the future. Furthermore, the market is very fragmented by various options regarding vehicle maintenance. The population relies on multiple entities for their vehicles maintenance and this presents an opportunity for Goodyear to consolidate the market. To go along with this, the most significant traits that people use to determine their maintenance provider are location and trustworthiness. If Goodyear can build upon these characteristics, then they might be able to increase their market share.

According to a recent study, it was determined that 41% of people are not confident in their ability to change a flat tire and 59% of people were not confident in their ability to change their own oil (King, 2016). These being two very common issues with vehicles, leads us to assume that individuals would not be able to do more complicated tasks with their vehicles. People might be more comfortable taking their car to a shop to have these things done. Goodyear could be able to exploit this by helping customers feel more comfortable when they are getting their cars fixed.

Many people do not trust repair shops because they are not sure exactly how much something normally costs or if a certain repair even needs to be done. People often complain that repair technicians come up with a long list of repairs that they might need even though they came in for a simple oil change. As mentioned, it is not unusual for some car makers to deliberately put out recalls, so people are forced to come in to get their car fixed. A mechanic even admitted

that he was pressured by his boss to perform services that were not asked for by the customer. Research also shows that people will not question these repairs because they do not know anything about cars themselves.

Throughout our research, we saw this trust factor seemed to be a major component of the maintenance industry. We want to help them find a way to bridge this gap. Reports show that at least one fifth of drivers feel as though they have been taken advantage of at one point or another. However, a majority of these individuals may be young because typically younger people have a lower average household income than older individuals and are more sensitive to large expenditures. If these repairs are not needed right away, then millennials may not trust that they actually need to be done causing further damage to their vehicles.

Currently, there are very minimal things being done by the majority of repair shops to create a trusting relationship between them and their customers. This is something that Goodyear can improve upon to help increase their market share in an industry that is growing on a continuous basis.

Primary Research

Given our findings in our secondary research, we asked, “What can Goodyear do to differentiate themselves from other auto service shops while enhancing the customer’s experience by building loyalty and trust?” The secondary research hints that something can be done to better create a long lasting, trusting relationship between auto service centers and their consumers. Therefore, we developed two forms of primary research to determine what would be most effective in achieving this goal while still keeping the overall project objective in mind. We created these two forms of primary research to separately target the following individuals on both sides of the auto service center relationship: general consumers and Goodyear auto service

center employees. We targeted the mind of the consumer through the distribution of a survey and the mind of Goodyear auto center employees through in-depth interviews. Throughout the remainder of this paper, we will present our findings from our research, followed by recommendations as to the best course of action for Goodyear.

Mechanic Interview Overview

Initially, our team agreed that the best approach to collect informative opinions from Goodyear auto service center employees was to interview employees face to face. In-person interviews often better allow for both the interviewer and interviewee to express themselves more deeply through their body language. However, as COVID-19 emerged, this approach was not possible due to restrictions from the imposed social distancing policy; therefore, we switched to email interviewing, asking the following questions:

1. What factors do you think people consider when going to one auto service center versus another?
2. Do you think it would be beneficial to both the mechanics and the customer for Goodyear to implement their own Auto Service App with features like scheduling an appointment, staying in contact with the mechanics, and seeing updates on their repairs (via text, images, videos)?
3. Do you think the pairing of OBD2 scanners and this app service would help you as a mechanic or just be a nuisance to you?
4. How do you see auto service centers evolving in the next 5-10 years?

Mechanic Interview Results

In asking the first question, the general response revolved around the topics of price, trust, and quality work. For example, Goodyear mechanic, Bill Heft, shared that "people want to trust the people they are doing business with. If you don't feel comfortable with who you are doing business with, you won't trust what they are telling you." Another mechanic from the Summit Mall location added that "most people want good quality work from someone they can trust." He further emphasized how deploying transparency and honesty will provide a service so great that the customer will not want to go to any other auto center. Next, responses to the second question indicated positive opinions around the suggestion of creating a Goodyear auto app. Specifically, one Goodyear mechanic from the Cuyahoga Falls location commented that "doing an auto app could be beneficial," noting that the current success of their website scheduling could extend to the mobile infrastructure. Another mechanic mentioned that testing an application could help customers feel more engaged with the repair process, leading to increased transparency and overall experience.

When asking the mechanics their opinions on pairing together the use of OBD2 scanners and a Goodyear auto app, some of them expressed their hesitation. One of the statements that generally represents all the shared opinions is as follows:

> If a customer pulls a code with a scanner, they don't realize that there is more work involved to find the true cause of the code. To me, it confuses the consumer because they feel the code tells you exactly what is wrong with the vehicle when most of the time it isn't, so that could be a nuisance.

While the responses to this question are valuable, our team found a major limitation that is worth explaining. The purpose of the question was to ask if introducing the pairing of a

consumer friendly OBD2 reader and the Goodyear auto app would provide value to the mechanic. Unfortunately, the question's vague wording most likely blurred the true understanding of this intention; specifically, the current wording probably led the mechanics to interpret it in one of the two following ways:

1. They thought that we were asking if creating a Goodyear auto app to pair with ***consumer's*** OBD2 readers would provide value.
2. They thought we were asking if creating a Goodyear auto app to pair with ***their*** technical OBD2 readers would provide value.

While the first interpretation is similar to our original question, the idea of a consumer friendly OBD2 reader for consumers was not emphasized, which is significant. When one searches "OBD2" reader on Amazon, an array of very technical looking, non-consumer friendly devices appears as seen below in figure 11. In contrast, the automobile market has recently introduced more modern looking, consumer-friendly readers that support app usage as shown below in figure 12. Now, while the mechanic's shared reason that OBD2 diagnostic codes are not an end-all in identifying car issues, our team does not believe that this directly conflicts with the specifics of our project recommendations, shared later on. Finally, the second possible interpretation is more so off target, leading to loss of potentially relevant answers. In identifying the limitation of this question, our team consequently took lightly the shared opinions from the mechanics.

Fig. 11 Technical OBD2

Fig. 12 Consumer Friendly OBD2

Finally, in response to asking how service centers may evolve in the next five to ten years, mechanics shared relatively similar answers. Goodyear mechanic, Ryan Rothgeb, wrote that service centers will adapt in providing increased technologically dependent services as more cars with integrated technology are being manufactured. Analyzing the industry as a whole, another mechanic mentioned that cars will always need to be fixed as the average American drives more each year, but the Goodyear auto centers must stay up to date with technological advancements in the industry to challenge current competitors.

Concluding this primary research has led us to discover that shared responses stand aligned with our secondary research, in that there is a need for a greater trust relationship between the two parties. The responses, in addition, hint at the possible benefit of integrating technology that may support this need.

Consumer Survey Overview

Following the in-depth interviews that our team conducted, we created and distributed a Qualtrics survey to further make discoveries that could support the overall objective. This 26-question survey focused on collecting the opinions on the auto service center industry from the

consumers' point of view. To maximize the diversity of survey takers, our team distributed it in the following two ways: 1) through friends and family and 2) through Amazon Mechanical Turk. The latter is "a crowdsourcing website for businesses to hire remotely located 'crowdworkers' to perform discrete on-demand tasks that computers are currently unable to do…[This includes] specific content in an image or video, writing product descriptions, or answering questions…" (FAQs, 2020).

Through both of these methods, we gathered 488 total responses within a month. To maintain the survey, we further cleaned the data by filtering out any survey response that took fewer than five minutes, leaving a total of 215 responses. We picked this time requirement as the cutoff point as recommended by Qualtrics' estimated completion time. In the appendix, we have included graphs making up all of survey questions and data. While all of the 26 survey questions helped add value to the progress of our project, we will only cover in detail the most important results we found that best helped us to reach our conclusions and recommendations.

Consumer Survey Demographics

Before covering the responses to our questions about the consumers' experiences and thoughts on auto service centers, we will cover the demographics of the survey takers. Our initial hope in collecting and analyzing this data was to see high diversity to best mimic the consumer diversity in the auto server center industry. Starting with gender, 54.2% of respondents were female while 45.8% were male. Next, the ages of the respondents were distributed in the following manner: 18-29 yrs (49.5%), 30-41 yrs (21.6%), 42-53 yrs (13.2%), 54-65 yrs (13.2%), and 66+ yrs (2.5%). In terms of our respondents' race, we found the least amount of diversity with the following distribution: white, non-Hispanic (77.9%), black, non-Hispanic (5.4%), Hispanic or Latino (5.9%), Asian/Pacific islander (6.9%), American Indian/Alaskan native

(2.4%) and other (1.5%). Overall, our respondents were moderately well educated with the following distribution: high school graduate (4.9%), some college (21.1%), associate degree (8.3%), bachelor's degree (49.5%), master's degree (14.7%), and doctorate (1.5%).

In terms of our respondents' household income, we found the highest amount of diversity with the following distribution: less than $10,000 (6.9%), $10,000-$29,999 (9.8%), 30,000-$49,999 (19.1%), $50,000-$69,999 (19.1%), $70,000-$89,999 (18.1%), $90,000-$99,999 (4.9%), $100,000-$149,999 (15.2%), and $150,000+ (6.9%). Finally, we found moderate diversity in the residing states of our respondents with a total of 32 US states being represented; the following top five states were the most reported: Ohio (39.71%), Texas (10.29%), California (8.33%), Florida (5.88%), and New York (5.88%). Summaries of these demographic results are found in the graphs below. Given these results, we believe that the demographic diversity of our survey respondents is moderately high; this means that the opinions, shared by our sample, will reasonably reflect those of the whole US population.

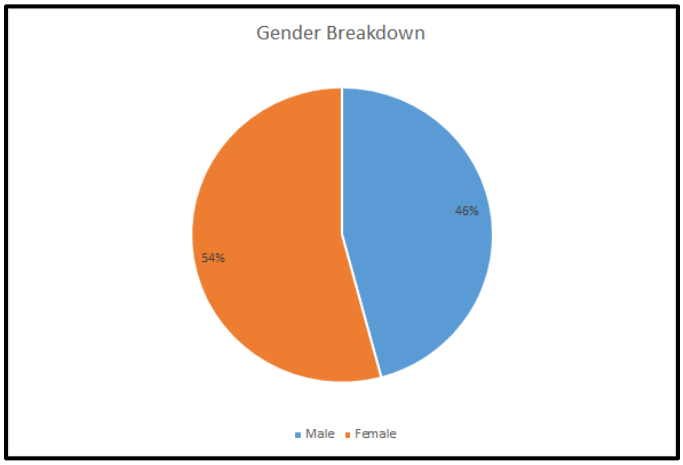

Fig. 13 Gender Breakdown of Survey Respondents

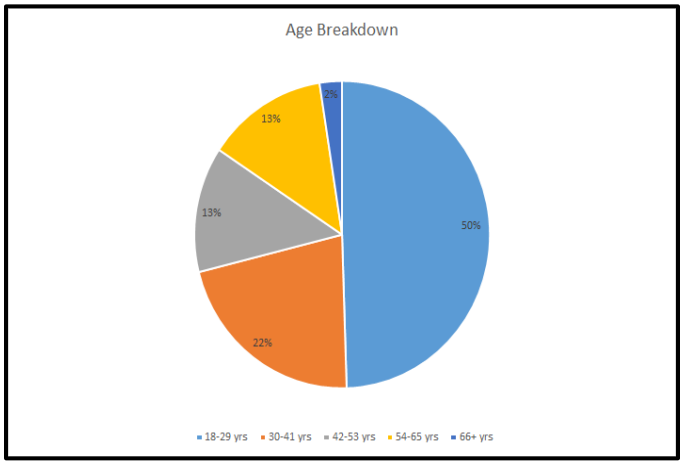

Fig. 14 Age Breakdown of Survey Respondents

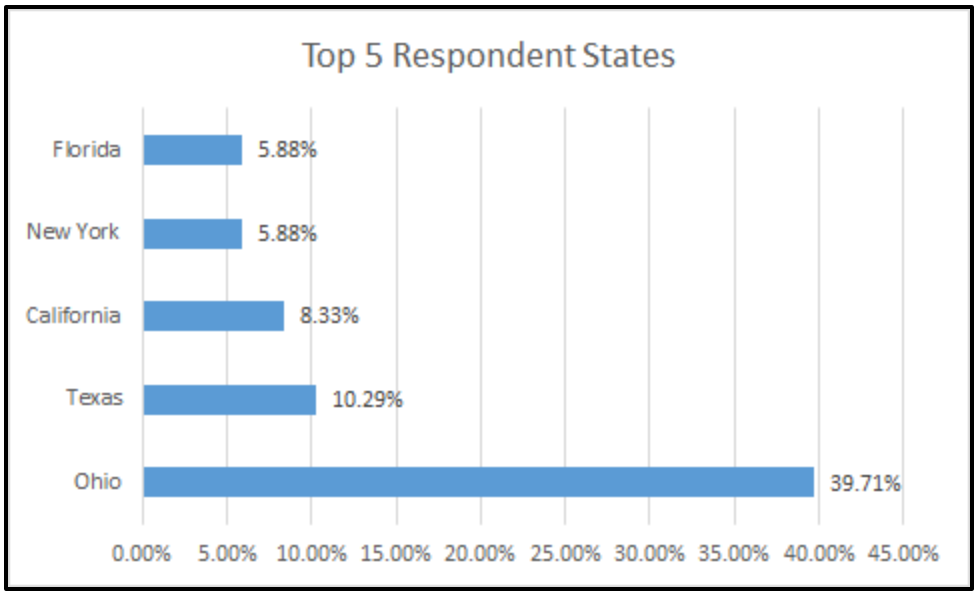

Fig. 15 Top 5 States of Survey Respondents

Consumer Survey Opinions

In the remaining portion of our survey we asked questions surrounding consumers opinions, attitudes, and desires about the auto maintenance experience. We asked consumers where they took their vehicle in the past 18 months for service and of those places to rank them from most to least preferred. To produce an all-encompassing representation of the rank order for each category, we created a point system whereby each rank was assigned a point value. Given that there were five categories of maintenance shops listed, Rank 1 (most preferred) received 5 points per response. Each successive rank received one less point, leaving Rank 5 with only 1 point per response. The total points for each maintenance shop category were added together to produce an, "Overall Importance Score," which was used to represent which categories were most highly preferred overall by our survey respondents. The overall importance scores from highest to lowest are as follows: Car Dealership (31.71%), Independent Repair Shop (27.81%), Maintenance Chain (17.81%), Fixed it yourself/Family or friend fixed it (15.55%), Retail Chain (7.12%). We asked a few questions about the services received during their visit and then asked,

"In getting your automobile(s) fixed, did you have any bad experiences with the service(s) provided?" We had 31% of our respondents say, "Yes." We then asked them to elaborate on why they had a bad experience to better understand and use this data in our recommendations to help mend the consumer and auto repair shop relationship. We had many responses that were beneficial to our recommendations, but one stuck out the most. The quote stated, "When getting oil changed, I was given a list of things wrong with my car and was pushed by the mechanic to get them done that day." This goes hand in hand with the temporal pressures we found consumers face during their automobile repair shop visits in our secondary research.

The next section of our survey surrounded what characteristics consumers found most important when choosing an automobile repair shop. We used the same rank order system described above to create an overall importance score for these characteristics. The overall importance scores from highest to lowest are as follows: Quality of Service (14.78%), Trustworthiness (14.73%), Price (13.8%), Reputation (11.9%), Proximity (11.47%), Customer Relationship (10.59%), Easy to Schedule (8.96%), Recommendation (6.92%), Online Presence (4.81%), and Other (2.03%) (Figure shown below). Our data matched closely to the secondary research as quality of service and trustworthiness are within the top five qualities considered. An interesting takeaway is the fact that price falls lower than both quality and trustworthiness. Therefore, we can assume most consumers would be willing to pay a premium for an experience they know will be quality and a mechanic they can trust. We followed this question asking consumers how the auto maintenance experience can be improved to meet their needs. We used the open responses to better understand what consumers would specifically like to be improved during the auto service maintenance experience. A common theme throughout the responses

surrounded open communication and transparency in the visit. Other consumers wish for online scheduling, prices, coupons and loyalty perks for returning customers.

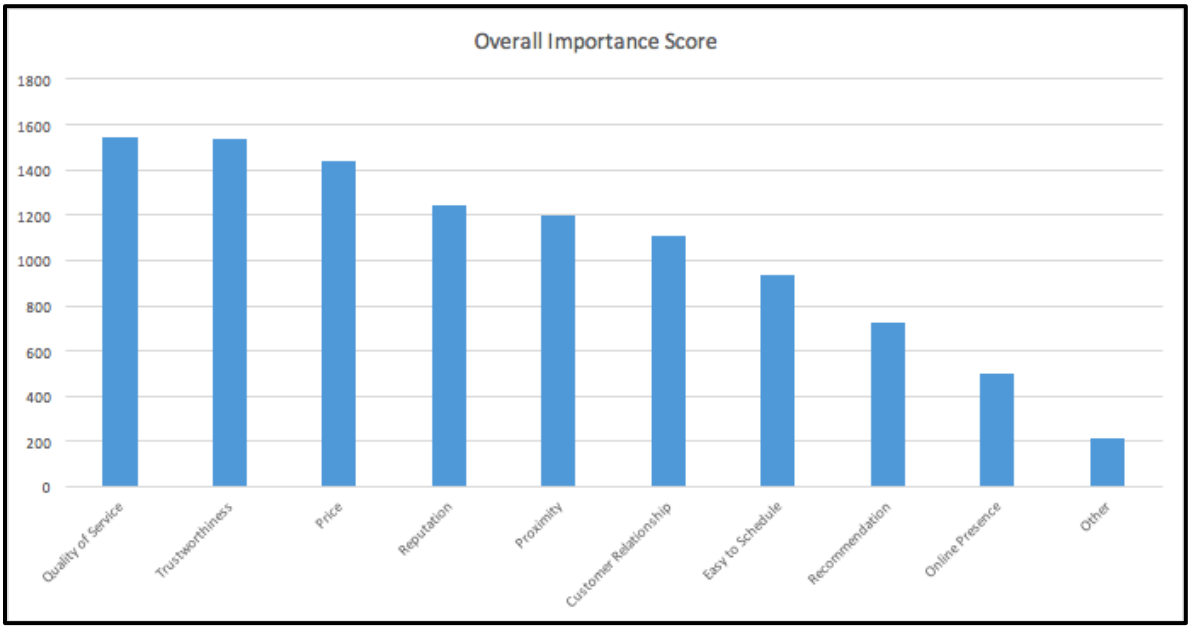

Fig. 16 Overall Importance Score of Auto Service Qualities

The remainder of our survey revolved around the innovative business idea we were building on for Goodyear. The first question we asked was, “Have you ever used an app to assist in an auto repair shop visit?” We had 29% of the respondents choose yes and 71% of respondents choose no. This means that a large majority of respondents have not yet been exposed to an auto service experience using an app. We then asked consumers to choose which level they agree with the following statements:

1. I would use a physical device that shows details of WHAT services my automobile needs and WHEN they need them.
2. I would use an app that shows details of WHAT services my automobile needs and WHEN they need them.
3. I would use an app that shows car services and more detail that is connected to an automobile service center.

The respondents had the ability to choose between highly disagree, disagree, neither agree nor disagree, agree and highly agree. For all three of the questions above, over 60% of respondents either agree or highly agree with the statements. This was encouraging to our group as it supports the recommendations we will be giving. The last question we asked was about different features of an application. We asked consumers to rank which features they would like to see in an automobile service center app from most desirable to least desirable. We used the same rank order point system described previously to assign an overall importance score to each app feature. The overall importance scores from highest to lowest are as follows: Loyalty Programs (16.5%), Easy Interface to Schedule an Appointment (16.38%), Coupons (15.67%), Receive Notification when Vehicle is Ready for Pickup (14.51%), Pay an Invoice (13.01%), Show Proximity of Automobile Service Locations (11.06%), Introduce you to the Mechanic(s) that will work on your vehicle (9.94%), and Other (2.93%) (Figure shown below).

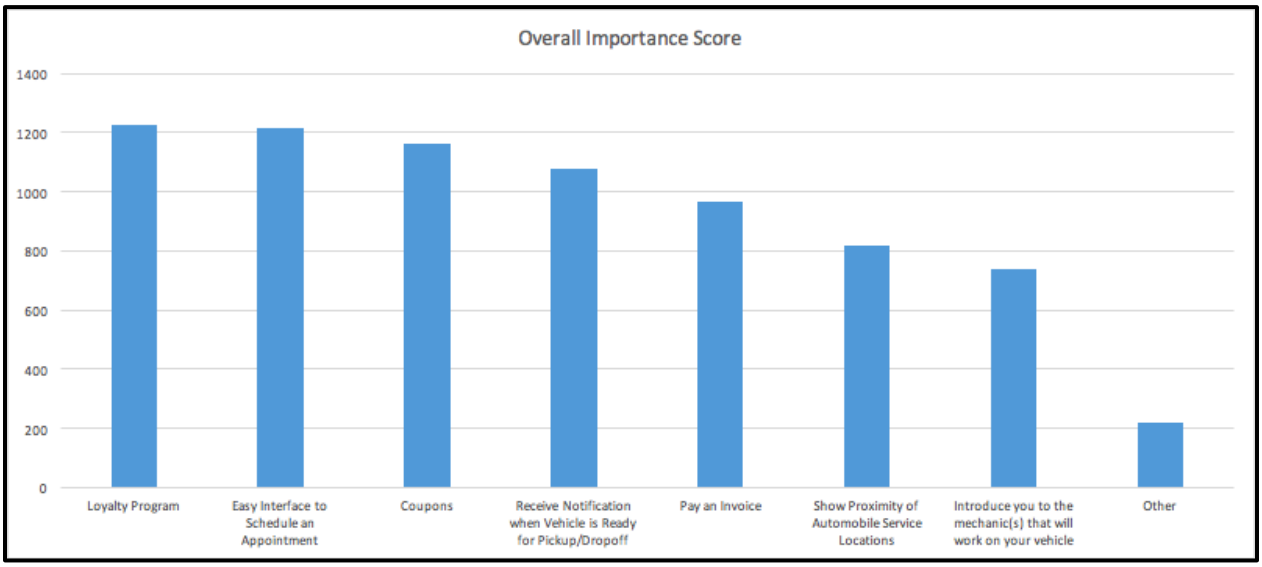

Fig. 17 Overall Importance Score of Auto Service App

Primary Research Takeaways

After conducting primary research surveys and mechanic interviews, we have a new insight into the market for an auto service repair app, and an OBD device that could be connected to the app as a service for customers.

We have concluded that there is a market for this service because there is a gap between the customer and the service mechanic. As Cuyahoga Falls store manager Bill Heft mentioned, "I truly believe that there are a few things consumers think about when going to a repair facility. I do think cost is a factor when someone is looking for a repair shop. I also think the staff plays part as well. People want to trust the people they are doing business with. If you don't feel comfortable with who you are doing business with you won't trust what they are telling you." This is that trust factor that we need to improve upon in order to make Goodyear every customer's first choice.

Bill Heft also said that "I think doing an auto app could be beneficial. At Goodyear we do have online services where customers can set up appointments on websites and also place orders for tires. This has worked very well because it's convenient to the consumer." He mentioned that an app can be beneficial, and he says that customers are always looking for convenience. That is the goal of the app implementation. We want something that is easy for the customers to use, while at the same time, improving upon that trust gap that currently exists in the auto service environment.

The surveys also emphasized our idea, because consumers ranked quality of service and trustworthiness above all other qualities. A majority of customers would pay a premium for a product if they knew that the quality of service was at an extremely high level. Most respondents also said that they are likely to use an auto service app if implemented. This is an essential piece

of information from the survey respondents because the key thing with this is that the app must be user friendly. We want the design of the app to be generated around the opinions of the users, so that it works as best as possible.

Recommendations

In our opinion, the best way to solve the issues that we have discussed previously is to first start by developing an On Board Diagnostic system that can be used to collect data from the consumer's vehicle to help further understand what is going on in their vehicle. This device would connect to the vehicle wirelessly. Similar devices are used by insurance companies to offer discounts to their customers for driving safely. Goodyear however would be pulling different information from this device. They would be more interested in error codes that the device receives and based on what error code is received, recommending the best course of action. For example, if an error code comes up that there is a problem with your transmission, then Goodyear would recommend that you bring your vehicle in as soon as possible to have it looked at. If an error code comes up that is less serious then it may recommend simply having it looked at during your next regularly scheduled maintenance.

There are two ways that Goodyear could approach this need for the data provided by the OBD2 device. The first way is that Goodyear could create a device themselves that specifically fits their needs. This would allow them to get all the features that they deem necessary. The second way they could approach the situation is they could get the information directly from insurance companies. This would be a cheaper option but it would also be difficult because many people do not have one of these devices through their insurance company. In order to make this option work, they would need to form a partnership with an insurance company. This entire process would take quite some time for a problem that needs to be fixed as soon as possible.

Therefore, we think that it would be best if Goodyear were to create their own OBD2 device to link directly into the auto service app. This would be costly however; it is the most effective option to help solve the issue in front of Goodyear.

We also recommend Goodyear either design and develop an app for their Goodyear Auto Service Centers or outsource the design and development of an app. First and foremost, the application could stand on its own without the OBD2 device. It is critical for Goodyear to meet the changing needs of consumers and find a more efficient and transparent way to communicate with them. It is especially critical in this industry where we have found that there is such a big disconnect between consumer and auto maintenance shops. Mobile apps for businesses provide many benefits. In a study done at Trakia University, they highlight some of the reasons having an app will improve business. Some of the reasons are as follows: "Visibility of the business, creating a direct marketing channel, added value for customers who are loyal to the business, building a brand for recognition, improving customer engagement, being innovators and progressive in thoughts and actions" (Angelova, 2019). All of these would be extremely beneficial for Goodyear Auto Service Centers to help improve trust between consumer and repair shop. We recommend Goodyear include the ability to preview different services that are offered at the shop with estimated prices for those services. This helps solve some of the transparency issues. We also recommend the ability to view a map with the closest Goodyear locations pinpointed so it is extremely easy to find where Goodyear Auto Centers are located near the consumer. The app should also have the ability to schedule an appointment. This was the second most important feature to consumers in our survey, it provides convenience and quick and easy access to the Goodyear Tire Centers. Through this app you will have the ability for sales growth by also taking advantage of promotion, discount and bonus push notifications. Once a consumer

has downloaded the app, through these methods Goodyear can motivate the consumer to purchase from them. “For example, a company can send a special offer to customers who are in close proximity to their store or office with the help of geolocation technologies offline” (Fedorychak, 2019). This would be an interesting feature for Goodyear to use to build an impressive mobile presence. They also could advertise the mobile app on their website and give incentive of a discount to download the app. Once consumers have downloaded the app Goodyear can take full advantage of this opportunity to build loyalty. Loyalty programs were the most desired feature of an app based on our survey and it would be an innovative idea in the automotive repair industry. If consumers begin to use the app to search for a repair price, schedule their appointments and pay invoices, Goodyear gets the powerful tool of increased interaction. More interaction increases loyalty, and in turn, a good loyalty level stimulates sales.

Although the application can stand on its own, through the combination of the app and the OBD2 device we believe Goodyear will be at a clear competitive advantage. Having the OBD2 connected to the Goodyear app builds an opportunity for consumers to be better educated which in turn will make the overall experience more consultative, communicative and transparent.

Implementation and Next Steps

The first step to implementing our recommendations would be the development of Goodyear’s own personal OBD2 device. OBD2 devices can have a wide range of price points depending on features and quality. The device would need to be programmed to recognize vehicle error codes and be compatible with a variety of vehicle makes and models. This will most likely require work from software engineers. In addition, Goodyear would need to develop the app that will be used to interface with the OBD2 device, as well as provide customers with

the additional features we have discussed (location finder, rewards program, etc.). Although Goodyear could make the app themselves, it would probably be beneficial to hire an app development company to assist with the creation of the app. This will allow Goodyear to not only maintain control of the app's features and overall vision, but also utilize the development company as a strong consulting tool to make their app as polished as possible. Once the OBD2 device and app have been developed, they can be linked together through a unique code assigned to every Goodyear OBD2 device. One of the most desired features of an auto service app according to our survey respondents is a loyalty program. Goodyear should develop a program that allows returning customers to take advantage of discounts and rewards, all of which could be kept track of through the Goodyear app.

The best way to roll out the OBD2/app pairing would be to market it directly to customers through the mechanics in Goodyear's auto repair shops. Each time a customer comes in for a repair, the mechanic could inform the customer about the features of the OBD2 device and app, followed by an offer to install the service. There are two ways Goodyear could profit from this endeavor. The first way would be to charge a one-time fee for the OBD2 installation, while the second would be to charge a subscription fee for the service. We would recommend charging a one-time fee for the installation of the OBD2 device so that customers can see the long-term value of the purchase. Customers will now be able to know what is wrong with their vehicle before they even enter the shop, creating transparency from the very beginning of the repair process. The profits from the installation of the OBD2 device are valuable, but the biggest value for Goodyear is the promise of a returning customer who is now committed to Goodyear auto service due to its quality, convenience, and transparency.

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Appendix

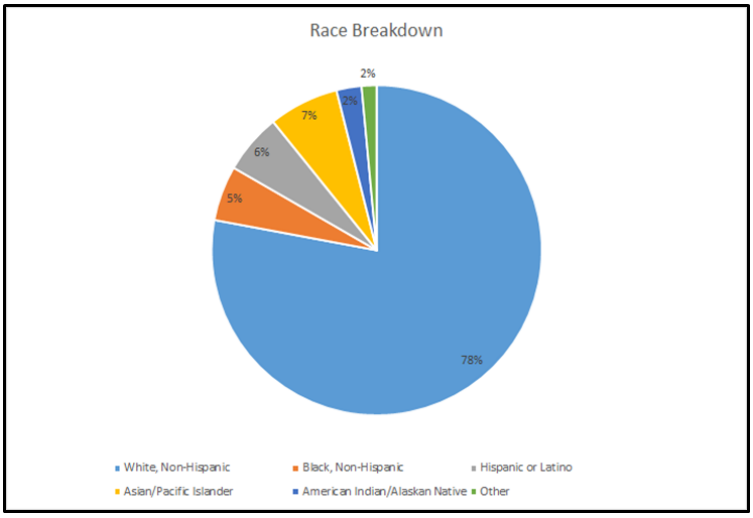

Fig. 18 Race Breakdown of Survey Respondents

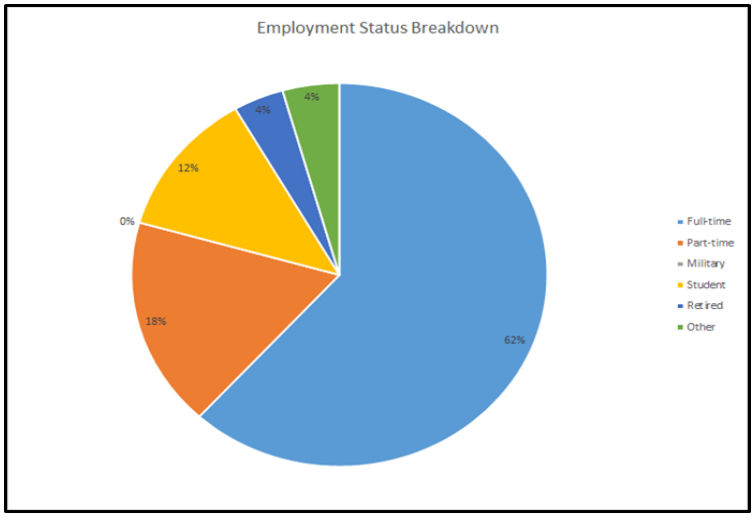

Fig. 19 Employment of Survey Respondents

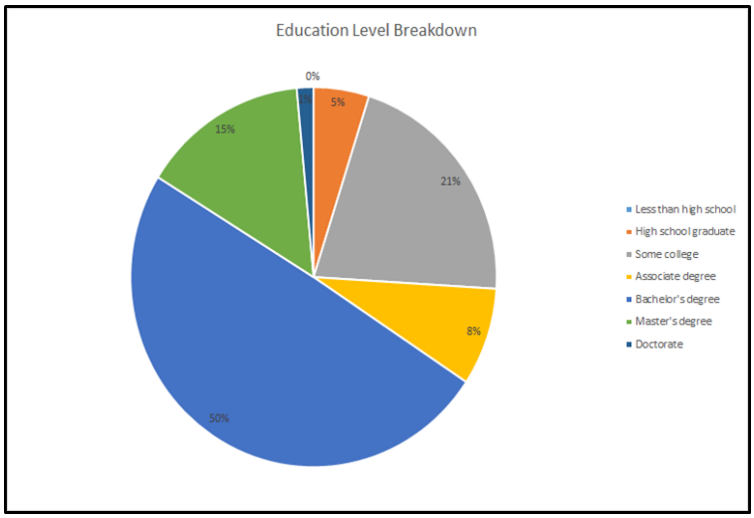

Fig. 20 Education Level Breakdown of Survey Respondents

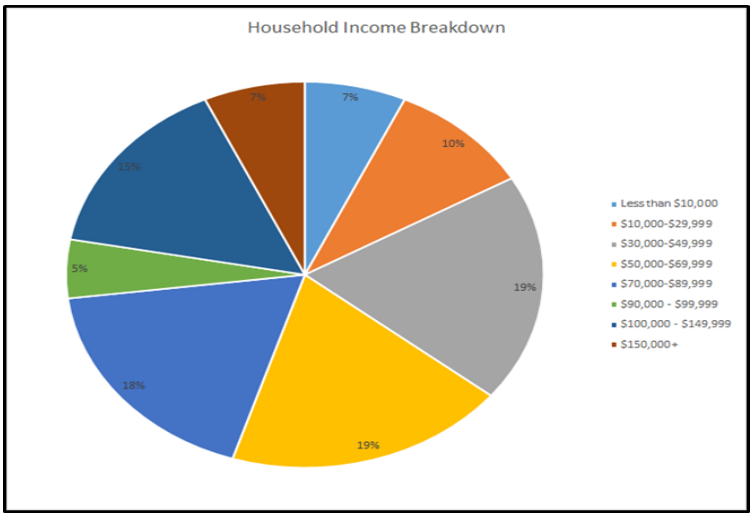

Fig. 21 Income Breakdown of Survey Respondents